General

Guideline Title

Evidence based practice guidelines for the nutritional management of adults with pressure injuries.

Bibliographic Source(s)

Evidence based practice guidelines for the nutritional management of adults with pressure injuries. Trans Tasman Dietetic Wound Care Group; 2011. 43 p. [92 references]

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Definitions for National Health and Medical Research Council (NHMRC) grades of recommendation (A-D) are provided at the end of the Major Recommendations.

1. Nutrition Screening
   Clinical Question

   1. What nutrition screening process can be used to best identify adults at risk of poor healing of pressure injuries due to nutritional problems?

   Evidence-Based Recommendation

   Nutrition screening, using a validated tool for the appropriate clinical setting, should be undertaken on all adults with pressure injuries to identify those at risk of poor healing due to nutritional problems. (NHMRC Grade of Recommendation: B)

2. Nutrition Assessment
   Clinical Question

   2a. How should the nutritional status of adults with pressure injuries be assessed?

   Evidence-Based Recommendation

   The nutritional status of patients with pressure injuries should be assessed using weight, food intake measures, body mass index (BMI), anthropometry and biochemistry to identify nutritional issues that may impact upon healing potential. (NHMRC Grade of Recommendation:

C)

As malnutrition impacts on healing potential, a validated nutrition assessment tool appropriate to the population in which it is to be applied should be used. (NHMRC Grade of Recommendation: B)

[Nutrition assessment is best undertaken by a dietitian.]

Clinical Question

2b. How should the nutritional requirements of obese patients with pressure injuries be determined?

Practice Recommendation

Nutritional requirements of obese patients with pressure injuries should be calculated with caution, using weight, food intake measures, BMI, anthropometry and biochemistry. (NHMRC Grade of Recommendation: D)

Clinical Question

2c. How should the nutritional requirements of patients with spinal cord injuries (SCI) and pressure injuries be determined?

Evidence-Based Recommendation

Nutritional requirements of SCI patients with pressure injuries should be calculated with caution, using level of injury, unintentional weight loss, food intake measures, healthy weight range for persons with a SCI, anthropometry and biochemistry, other than BMI alone. (NHMRC Grade of Recommendation: C)

3. Nutrition Goals, Interventions and Monitoring
Clinical Question

3a. What nutritional interventions should be implemented to assist the healing of pressure injuries?

Evidence-Based Recommendation

Nutritional interventions as per the evidence statements outlined in the original guideline document should be implemented to assist healing of pressure injuries, under the guidance of a dietitian. (NHMRC Grade of Recommendation: C)

Clinical Question

3b. Should arginine containing nutritional supplements be used?

Evidence-Based Recommendation

Arginine containing supplements may be considered for patients who have a stage II or above pressure injury. (NHMRC Grade of Recommendation: C)

Where arginine containing supplements are not available, treatment should follow according to recommendations in section 3a. (NHMRC Grade of Recommendation: C)

Clinical Question

3c. How should the nutritional status of adults with pressure injuries be monitored?

Evidence-Based Recommendation

Nutritional status should be re-assessed regularly following an individualised assessment plan (by a dietitian), which includes an evaluation date. (NHMRC Grade of Recommendation: C)

Definitions:

Grades of Recommendations

Level A Body of evidence can be trusted to guide practice.

Level B Body of evidence can be trusted to guide practice in most situations.

Level C Body of evidence provides some support for recommendation(s) but care should be taken in its application.

Level D Body of evidence is weak and recommendation(s) must be applied with caution.

Clinical Algorithm(s)

A pressure injury nutrition treatment quick reference tool is provided in the original guideline document.

Scope

Disease/Condition(s)

Pressure injuries (pressure ulcers)

Guideline Category

Evaluation

Management

Risk Assessment

Screening

Treatment

Clinical Specialty

Critical Care

Family Practice

Geriatrics

Internal Medicine

Nutrition

Physical Medicine and Rehabilitation

Intended Users

Advanced Practice Nurses

Dietitians

Health Care Providers

Hospitals

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To provide healthcare professionals with an evidence-based practice guideline to maximise the effectiveness of nutritional interventions in the healing of pressure injuries in adult patients
- To ensure that adults with pre-existing pressure injuries are appropriately screened, assessed, treated and monitored to maximise healing through recommendations relating to the provision of appropriate and adequate nutrients

Target Population

Any adult who has one or more pre-existing pressure injury(ies)

Note: By definition, those excluded are patients aged less than 16 years of age or who are under the care of a paediatric health care team. Other excluded groups are those for whom the dietary treatments outlined in the guidelines would cause harm due to another pre-existing medical condition, or where a practice guideline exists that would more closely meet their medical and nutritional requirements.

Interventions and Practices Considered

1. Nutrition screening, using a validated tool
2. Assessment of nutritional status (weight, food intake measures, body mass index [BMI], anthropometry and biochemistry)
3. Calculation of nutritional requirements of obese persons and persons with spinal cord injuries
4. Nutritional interventions (energy, protein, fluid, and micronutrient requirements)
5. Arginine-containing supplements
6. Regular re-assessment of nutritional status by a dietitian

Major Outcomes Considered

- Risk of severity and prevalence of pressure injury development
- Predictive value of nutritional screening tools for pressure injury development
- Effectiveness of nutritional supplements for wound healing

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Two published nutrition guidelines for the treatment and prevention of pressure injuries were identified and their evidence used as a basis for the original 2008 guideline. The literature search of the 2008 guidelines included documents up to and including July 2006. The literature search for this current review (Review 1; 2011) includes documents published up until January 2010. Search terms for the 2011 review can be seen in table 3 of the original guideline document.

Exclusion of research was not determined by the type of research, but whether it matched the population group and the related clinical question.

Inclusion and Exclusion Criteria

Inclusion Criteria for Literature Search

- Human studies
- Adult
- Published in English language

- Published Jan 2006 – Jan 2010
- Pressure injury management/treatment of existing pressure injury
- Systematic review, where details given of methodology of review process
- Clinical guideline (published)
- Research article (any type—qualitative/quantitative)

Exclusion Criteria for Literature Search

- Animal studies
- Children
- Not published in English language
- Published prior to Jan 2006/referenced in 2008 pressure ulcer guidelines
- Non-pressure ulcer wounds
- No nutrition-specific information contained
- Pressure ulcer prevention

Exemptions/Extenuating Circumstances

Where little/no research is found on the key clinical question, however there is a practice-review/substantial review paper available. This information may be included in the guidelines, as a 'practice point/practice recommendation'.

Number of Source Documents

One hundred and fifteen papers were found. Of these 62 papers were relevant to the clinical questions and went forward for critical appraisal and potential inclusion in the guidelines.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence

	Intervention	Diagnostic Accuracy	Prognosis	Aetiology*	Screening Intervention
I	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies	A systematic review of level II studies
II	A randomised controlled trial	A study of test accuracy with: an independent, blinded comparison with a valid reference standard, among consecutive persons with a defined clinical presentation	A prospective cohort study	A prospective cohort study	A randomised controlled trial
III-1	A pseudo-randomised controlled trial (i.e., alternate allocation or some other method)	A study of test accuracy with: an independent, blinded comparison with a valid reference standard, among non-consecutive persons with a defined clinical presentation	All or none	All or none	A pseudo-randomised controlled trial (i.e., alternate allocation or some other method)

III-2	A comparative study with concurrent controls: non-randomised, experimental trial, cohort study, case-control study, interrupted time series with a control group	Diagnostic accuracy with reference standard that does not meet the criteria required for Level II and III-1 evidence	Analysis of prognostic factors amongst persons in a single arm of a randomised controlled trial	Aetiology* retrospective cohort study	Screening study with concurrent controls: non-randomised, experimental trial, cohort study, case-control study
III-3	A comparative study without concurrent controls: historical control study, two or more single arm study, interrupted time series without a parallel control group	Diagnostic case-control study	A retrospective cohort study	A case-control study	A comparative study without concurrent controls: historical control study, two or more single arm study
IV	Case series with either post-test or pre-test/post-test outcomes	Study of diagnostic yield (no reference standard)	Case series, or cohort study of persons at different stages of disease	A cross-sectional study or case series	Case series

*If it is only possible and/or ethical to determine a casual relationship using observational evidence, then the 'aetiology' hierarchy of evidence should be used.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Each research paper was appraised by two dietitians. If a consensus could not be reached, a third dietitian reviewed the literature to enable a recommendation to be made. Critical appraisal of the literature was undertaken using the critical appraisal tools promoted by the Critical Appraisal Skills Programme (Milton Keynes Primary Healthcare Trust 2002). The Appraisal for Guideline Research and Evaluation (AGREE) tool was used to critically appraise any guidelines identified during the literature search. Types of studies included were systematic reviews, randomised control trials, cohort studies and cross sectional studies.

Usually systematic reviews of randomised controlled trials are classed as the best source of clinical evidence, however nutrition-based research is often cross-sectional, qualitative or cohort studies. In the original guidelines the evidence was graded using the levels of evidence and grades of recommendation score system developed by the Scottish Intercollegiate Guidelines Network (SIGN) 2000. To facilitate use of these guidelines by Australian Accredited Practicing Dietitians in Review 1; 2011 the levels of evidence and grades of recommendation have been revised to meet the National Health and Medical Research Council (NHMRC) (2005) grades (see the "Rating Scheme for the Strength of the Evidence" field).

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

These guidelines were written by a trans-Tasman group including members of Dietitians New Zealand (Dietitians NZ) and the Dietitians Association of Australia (DAA).The members of the review group were independent dietitians with an interest and working experience in the area of pressure injuries.

Following critical appraisal of the literature, a summary document was developed that formulated a response to the clinical question as determined by available research. The format used for this document was the New Zealand Guidelines Group (NZGG) recommended considered judgment form.

Where no clinical evidence exists, however there are expert opinions (either from the literature or in the clinical practice of the guideline authors) these have been documented as 'practice points/practice recommendations' and references given where appropriate.

Rating Scheme for the Strength of the Recommendations

Grades of Recommendations

Level A Body of evidence can be trusted to guide practice.

Level B Body of evidence can be trusted to guide practice in most situations.

Level C Body of evidence provides some support for recommendation(s) but care should be taken in its application.

Level D Body of evidence is weak and recommendation(s) must be applied with caution.

Cost Analysis

Published cost analyses were reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

A multidisciplinary expert review panel was identified to independently appraise and review the guidelines. A formal appraisal tool (Appraisal for Guideline Research and Evaluation [AGREE]) was used by the expert review panel to appraise the guidelines, as well as receiving general comments. See Appendix 2 in the original guideline document for expert review panel details. The guidelines have been open to Dietitians NZ (New Zealand) and Dietitians Association of Australia (DAA) members, and DAA allocated reviewers for comment at several stages during the development. Modifications to these guidelines have been undertaken in response to feedback received.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

In addition, evidence statements and graded evidence levels supporting each recommendation are provided in the original guideline document.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Potential Benefits

Implementation of these guidelines is expected to have the following health-benefit outcomes:

- Early identification of those at risk of poor healing of pressure injuries due to nutritional problems
- Standardised nutrition assessment and monitoring of patients with pressure injuries
- Improved health outcomes for patients receiving optimal nutritional treatment
- A skilled workforce of healthcare professionals working to best practice guidelines
- Advocacy for patients to receive appropriate dietetic referral and interventions – both in staff resources and policy

Potential Harms

Although research indicates that arginine is well tolerated by patients, and patients given arginine-enriched nutritional supplements have not experienced any side-effects or reactions, there is awareness that there is a potential risk for patients as nitric oxide may be involved in the development of sepsis and inflammation. Caution should be taken when using arginine with patients in intensive care units and those with infection.

Qualifying Statements

Qualifying Statements

This document is to be used as a guideline only and does not replace individual patient assessment by a dietitian. Dietitians are integral members of the multidisciplinary team approach to wound healing. It is crucial to the appropriate implementation of these guidelines that a dietitian be consulted to ensure that nutrition intervention is relevant and done in a timely manner. This will assist in maximizing efficacy of the team interventions.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Clinical Algorithm

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011

Guideline Developer(s)

Trans Tasman Dietetic Wound Care Group - Professional Association

Source(s) of Funding

Trans Tasman Dietetic Wound Care Group

Guideline Committee

Guideline Review Group

Composition of Group That Authored the Guideline

Review Group 2011 Members: Lilliana Barone, Clinical Dietitian, Illawarra Shoalhaven Local Health Network, Australia; Helen Brown, Community Dietitian, Nurse Maude, Christchurch, New Zealand; Elizabeth Carnachan, Community Dietitian, Home and Older Adult Services, Waitemata District Health Board, New Zealand; Beryl Dawson, Clinical Dietitian, Sydney Local Health Network, Australia; Kaye Dennison, Professional Leader – Dietitian, Waitemata District Health Board, New Zealand; Brielle Gosch, Clinical Dietitian, South Eastern Sydney Local Health Network, Australia; Kendall Ingram, Clinical Dietitian, South Eastern Sydney Local Health Network, Australia; Bridget Little, Nutrition & Food Services Team Leader, Waitemata District Health Board, New Zealand; Alex McClelland, Clinical Dietitian, South Eastern Sydney Local Health Network, Australia; Stephanie Morrison, Clinical Dietitian, Waitemata District Health Board (retired), New Zealand; Susan Nelan, Senior Clinical Dietitian, Spinal Pressure Care Clinic, South Eastern Sydney Local Health Network, Australia; Katrina Pace, Clinical Dietitian, Waitemata District Health Board, New Zealand, Massey University, Auckland

Financial Disclosures/Conflicts of Interest

No group member was involved in the research or publication of papers included or excluded from the evidence based review. Expert review of the draft document has been undertaken by participants in published research, however their comments were limited to general comments on the document not on their own research.

These guidelines were developed by an independent group of dietitians who were not funded, and did not receive funding or incentives from any

business, association or group other than regional District Health Boards, Dietitians New Zealand or Dietitians Association of Australia.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Trans Tasman Dietetic Wound Care Group Web site .

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on January 5, 2012. The information was verified by the guideline developer on February 13, 2012.

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